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PSEUDOCHRISTIANELLA (CESTODA: TRYPANORHYNCHA), A NEW GENUS FOR *TENTACULARIA MINUTA* (VAN BENEDEN, 1849) *SENSU* SOUTHWELL, 1929 AND ITS RELATIONSHIPS WITH THE FAMILY EUTETRARHYNCHIDAE

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Summary

CAMPBELL, R. A. & BEVERIDGE, I. (1990) *Pseudochristianella* (Cestoda: Trypanorhyncha), a new genus for *Tentacularia minuta* (Van Beneden, 1849) *sensu* Southwell, 1929 and its relationships with the family Eutetrarhynchidae. *Trans. R. Soc. S. Aust.* 114(4), 219–222, 30 November, 1990.

Pseudochristianella southwelli gen. et sp. nov. is created for *Tentacularia minuta* Van Beneden, 1849 of Southwell, 1929 from an unknown species of *Carcharhinus* and *Rhynchobatus halavi* taken at Negapatam, India. *Pseudochristianella* is a eutetrarhynchid with two bothridia, elongated bulbs and a heteroacanthous, heteromorphous armature that combines features of *Parachristianella*, *Trimacracanthus* and *Prochristianella*. The new genus is distinctive in combining the metabasal armature of *Parachristianella and Trimacracanthus* (hooks 1(1′) of each row largest, the remaining hooks decreasing in size), and a prominent basal swelling on each tentacle as in *Prochristianella* and *Trimacracanthus*. *Parachristianella* differs in lacking a tentacular basal swelling and *Trimacrancanthus* is distinguished by the three large hooks of the basal armature. *Prochristianella* has a basal swelling but the metabasal hooks increase in size at the middle of each row.

KEY WORDS: Cestoda, Trypanorhyncha, *Pseudochristianella*, new species, new genus.

Introduction

One of the species of trypanorhynchs from elasmobranchs from the Indian Ocean which Southwell (1929) allocated to the genus *Tentacularia* was *T. minuta* (Van Beneden, 1849). Southwell's hosts were an unidentified species of *Carcharhinus* and *Rhynchobatus halavi* (Försskal, 1775) both taken at Negapatam, India. Beneden's (1849) original description of this species was from an angelshark, *Squatina squatina* (L.), in Belgian waters but the description is so meagre that Southwell's specimens cannot be considered conspecific with any degree of confidence. Guiart (1931) placed *T. minuta* in his new genus *Christianella*, for which a more detailed description was given by Joyeux & Baer (1936). Dollfus (1942) initially accepted this description, but later (1946) found that the description of *Christianella* was vague and created the related genera *Prochristianella* and *Parachristianella* realizing that either might be a synonymn of *Christianella* when the latter genus was properly described. Beveridge & Campbell (1987) have discussed the problems associated with *Christianella* and also consider that genus unrecognizable. Dollfus (1942) pointed out several errors in Southwell's (1929) account of *Tentacularia minuta* including his report of this species from an Australian ray. In this paper all of Southwell's specimens labelled *T. minuta* have been re-examined and constitute an undescribed species having characters fitting neither *Prochristianellan* nor *Parachristianella* according to the most recent definitions of these genera (Schmidt 1986).

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Materials and Methods

Four specimens identified by Southwell as *T. minuta* (Van Beneden, 1849) from *Carcharhinus* sp., Negapatam, India (British Museum, Natural History, London) (1977.11.4.30–31) and two specimens from *Rhynchobatus halavi* from the same locality (BMNH 1977.11.4.27–28) were examined. All figures are drawn from the specimens from *Carcharhinus*. Measurements are in mm unless otherwise indicated.

Pseudochristianella gen. nov.

Diagnosis: Eutetrarhynchidae. Small worms with two bothridia and elongate bulbs. Prebulbar organs present. Pars postbulbosa and velum absent. Metabasal armature heteroacanthous, heteromorphous, typical. Metabasal hooks arranged in alternating half-spiral rows. Hooks 1(1′) large, separated by prominent space, remaining hooks of each row decreasing in size. Basal swelling on tentacle. Distinctive basal armature present, restricted to external face of tentacle. Segments acraspedote; testes tandem, in two rows; internal and external seminal vesicles absent. Adults parasitic in selachians.

Type and only species: P. southwelli sp. nov.

***Pseudochristianella southwelli* gen. et sp. nov.**
FIGS 1–9

Tentacularia minuta: Southwell 1929 pp. 228–230, fig. 13.

Types: Holotype from *Carcharhinus* sp., Negapatam, India, 7.ix.1926, collector ? J. Pearson in BMNH no 1977.11.4.30–31; three paratypes on single slide, same data and collection number.

Material examined: From *Carcharhinus* sp.: types. From *Rhynchobatus halavi*, two specimens, Negapatam, India, (BMNH 1977.11.4.27–28) (slide also contains *Phyllobothrium* sp.)

Etymology: The species is named after T. Southwell.

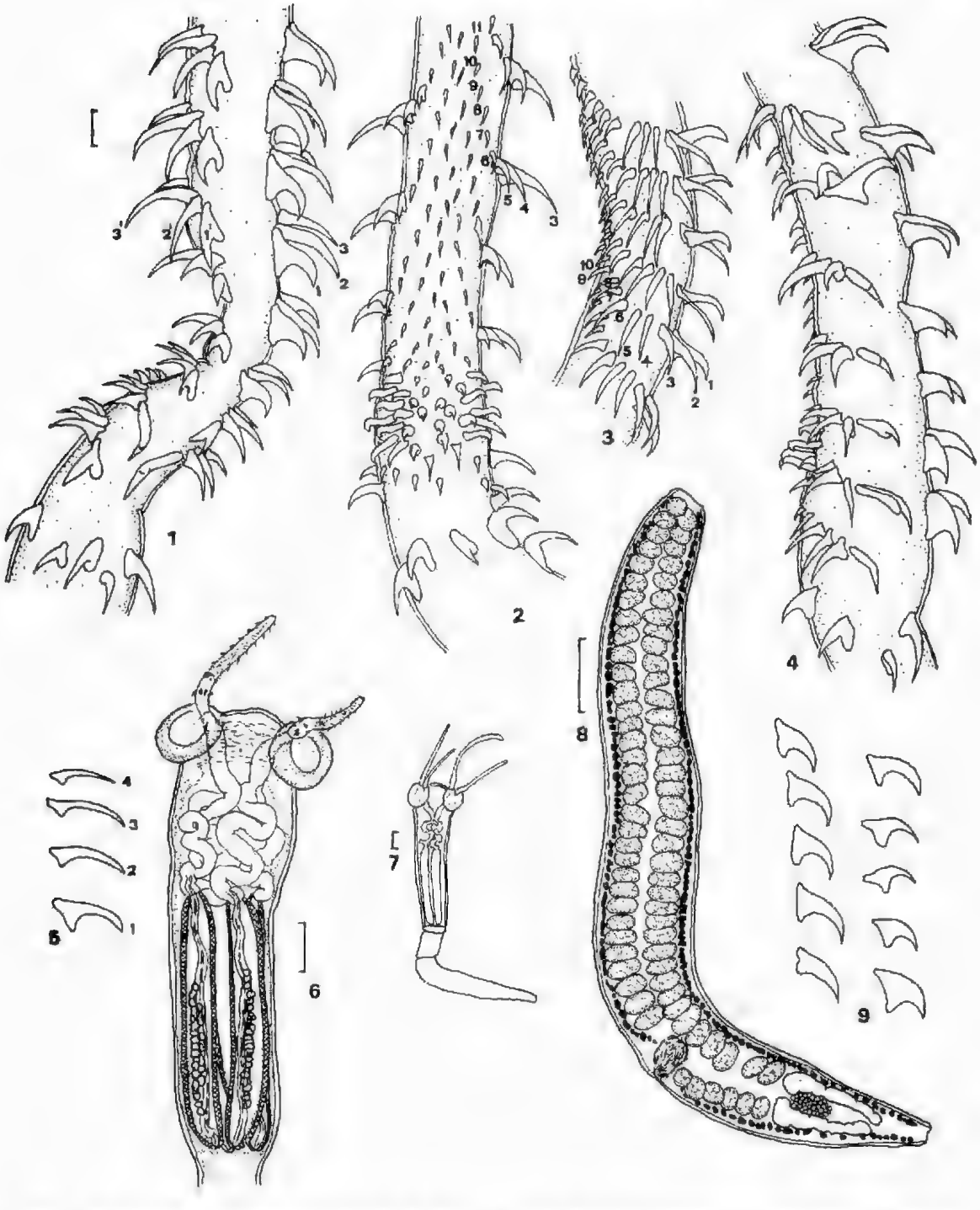
Description: Small cestodes, total length up to 4.0, with up to six proglottids. Scolex 0.92–1.00 (0.97, n=3) long, maximum width 0.21–0.26 (0.24, n=4). Two rounded bothridia, 0.12–0.18 (0.15, n=4); pars vaginalis 0.37–0.51 (0.42, n=3), tentacle sheaths sinuous; prebulbar organs present; bulbs long and slender, 0.45–0.58 (0.51, n=4) by 0.06–0.07 (0.07, n=4); retractor muscle originates at base of bulb, surrounded by clusters of gland cells within bulb; pars postbulbosa and velum absent. Tentacles possess prominent basal swelling 0.025–0.030 (0.027, n=4) in diameter; diameter in metabasal region 0.010–0.015 (0.013, n=2). Base of tentacle encircled by two rows of large, strongly recurved hooks, 0.014–0.022 (0.018, n=5) long, base length 0.010–0.012 (0.011, n=5); remainder of armature heteracanthous typical, composed of ascending half-spiral rows of 11 hooks each; rows terminate on external face to form inverted V's. Distinctive basal armature restricted to external face of tentacle, composed of four to five ascending rows of hooks. Viewed from the external face, hooks of first row spiniform; hooks of succeeding three to four rows bill-hook shaped, small and stout, points strongly recurved, hook length 0.009–0.013 (0.011, n=5). Hooks 1(1′) on internal surface separated by distinct space; hooks initially uncinate in basal region, 0.014–0.018 long, base length 0.012–0.013. Hooks 1(1′) in metabasal region becoming falcate with diminishing base lengths, 0.014–0.020 (0.017, n=5) long, base length 0.007–0.011 (0.010, n=5). Hooks 2(2′) falcate, stout at base of tentacle, becoming slender anteriorly, 0.017–0.022 (0.019, n=5) long, base 0.005–0.006 (0.005, n=5). Hooks 3(3′) falcate 0.020–0.022 (0.021, n=5) long, base 0.005–0.006 (0.006, n=5). Hooks 4(4′) slender, falcate, 0.016–0.018 (0.017, n=5) long, base 0.004–0.005 (0.005). Hooks 5(5′) falcate, smaller, 0.010–0.014 (0.012, n=5) long, base 0.003–0.004 (0.003, n=5). Hooks 6(6′) spiniform, 0.008–0.012 (0.010, n=5) long. Hooks 7(7′) to 11(11′) in metabasal region distinctly smaller than hooks 6(6′), hook lengths 0.004–0.006 (0.005, n=5); diminishing hook sizes more subtle in mid-region of tentacle.

Mature segment 2.14 by 0.26, acraspedote. Genital pore opens in posterior one-third of margin, approximately 78% of segment length from anterior end. Cirrus sac ovoid, internal details not clearly visible, seminal vesicles absent. Testes number approximately 80, arranged in two longitudinal rows, distributed as 6 postporal, 32 preporal and 42 antiporal. Ovary bilobed in dorsoventral view, lobes 0.14 by 0.04. Mehlis' gland 0.06 in diameter. Vitellaria arranged in single layer of follicles encircling internal organs. Uterus tubular, median, linear, occupying all available space in gravid segment.

Discussion

Tentacularia minuta of Southwell (1929) possesses a combination of characters not found in other eutetrarhynchid cestodes. These are the combination of (i) hooks 1(1′) separated by a distinct space, hook rows terminating in inverted V-formation on the external face of the tentacle; (ii) a basal swelling and armature; (iii) the absence of three large hooks in the basal armature; and (iv) a metabasal armature consisting of half-spiral rows of hooks which diminish in size from the beginning (internal face) to the end (external face) of each row. Such a combination of characters suggests a new genus to accommodate them. We propose the new genus *Pseudochristianella* and that *T. minuta* of Southwell (1929) become *P. southwelli*, the type species.

Members of the family Eutetrarhynchidae having hooks 1(1′) separated by a distinct space and only exhibiting V-formations of hook rows on the external face where rows end are: *Prochristianella* Dollfus, 1946; *Parachristianella* Dollfus, 1946, *Mecistobothrium* Heinz & Dailey, 1974 and *Trimacracanthus* Beveridge & Campbell, 1987. *Eutetrarhynchus* Pintner, 1913 differs in having no space between hook files 1 and 1′, while *Oncomegas* Dollfus, 1929 differs further in having a single large hook at the base of the tentacle. *Prochristianella* possesses a basal swelling but can be quickly eliminated from further consideration because the metabasal hooks show an increase and subsequent decrease in size along the rows from internal to external face of the tentacle. The metabasal armature of *Pseudochristianella* resembles that of *Parachristianella*, *Mecistobothrium* and *Trimacracanthus* in that the hooks of each row decrease in size from the internal to the external face of the tentacle. The presence of a basal swelling in *Pseudochristianella* distinguishes it from *Parachristianella* and the absence of the triad of large hooks in the basal



Figs 1-9 *Pseudochristianella southwelli* gen. et. sp. nov. 1, internal face, basal region; 2, external face, basal region; 3, bothridial face, metabasal region; 4, basal armature, internal face; 5, metabasal hooks, numbers 1 to 4; 6, scolex; 7, entire worm; 8, terminal segment (mature); 9, metabasal hooks 1(1'). Line scales: figs. 1-5 and 9, 0.01mm; figs. 6-8, 0.1mm.

armature of *Pseudochristianella* separates it from *Trimacracanthus* (see Beveridge & Campbell 1987). *Mecistobothrium* has bulbs shorter than the bothridia (Heinz & Dailey 1974).

In *P. southwelli* the basal armature is distinctive in that it is restricted to the external face of the tentacle. The hooks on the internal face are merely a continuation of the metabasal region. This is probably of secondary importance because only the hooks of the external face in the basal region are modified in *Trimacracanthus aetobatidis*.

Dollfus (1942) pointed out several errors in Southwell's (1929) account of the species. Southwell (1929) stated that the species had also been recorded from *Urolophus testaceus* in European waters, but Dollfus (1942) correctly observed that *U. testaceus* is an Australian ray. The error stems from a specimen in Southwell's collection (see BMNH 1977. 11.4.29) from *U. testaceus* from Moreton Bay, Qld. The specimen, though in poor condition, has been re-examined and identified as a species of *Eutetrarhynchus*, close to *E. geraschmidti* Dollfus, 1974.

Acknowledgments

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